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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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WINSTEAD PC P.O. BOX 50784 DALLAS, TX 75201			EXAMINER NGUYEN, HOANG V	
			ART UNIT 2821	PAPER NUMBER
			MAIL DATE 10/29/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/587,119

**Applicant(s)**

CASTANY ET AL.

**Examiner**

Hoang V. Nguyen

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>See Continuation Sheet</u> . | 6) <input type="checkbox"/> Other: _____  |

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :7/21/06; 11/20/06; 12/27/06; 5/4/07; 5/21/07; 7/2/07; 8/24/07.

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 20 is rejected under 35 U.S.C. 112, second paragraph, as being in definite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 20 recited the limitation "symmetrical multiband monopole antennas" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim. Claim 9 does not recite any "symmetrical multi-band monopole antennas". Should claim 20 depend on claim 19 instead? Clarification/correction required.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 6, 7 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Yeh (US 6,822,610 B2).

Regarding claim 1, Yeh (Figure 6, col 4 lines 47-62) discloses a multi-band monopole antenna comprising an antenna substrate 67; a first conductor 643 for receiving networking signals in the frequency range of about 4.9 GHz to about 5.875 GHz, the first conductor having a

polygonal shape with an aspect ratio of length to width of less than about 5 to about 1; a second conductor 642 for receiving networking signals in the frequency range of about 2.4 GHz to about 2.5 GHz, the second conductor adopting a linear, space-filling, or grid dimension shape; and a feeding point 641 for connecting the first conductor and the second conductor.

Regarding claim 6, as applied to claim 1, Yeh (col 4, lines 59-62) teaches that the first conductor receives network signals in the 802.11a band.

Regarding claim 7, as applied to claim 1, Yeh (col 4, lines 59-62) teaches that the second conductor receives network signals in the 802.11b band.

Regarding claim 9, as applied to claim 1, Yeh (Figure 6) shows a circuit board comprising one or more of the multi-band monopole antennas.

5. Claims 1, 6, 7, 9, 11, 16, 17, 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Wong et al (US 6,747,600).

Regarding claim 1, Wong (Figure 7a) discloses a multi-band monopole antenna comprising an antenna substrate 740; a first conductor 712 for receiving networking signals in the frequency range of about 4.9 GHz to about 5.875 GHz, the first conductor having a polygonal shape with an aspect ratio of length to width of less than about 5 to about 1; a second conductor 711 for receiving networking signals in the frequency range of about 2.4 GHz to about 2.5 GHz, the second conductor adopting a linear, space-filling, or grid dimension shape; and a feeding point 720 for connecting the first conductor and the second conductor.

Regarding claim 6, as applied to claim 1, Wong (col 4, lines 42-49) teaches that the first conductor receives network signals in the 802.11a band.

Regarding claim 7, as applied to claim 1, Wong (col 4, lines 42-49) teaches that the second conductor receives network signals in the 802.11b band.

Regarding claim 9, as applied to claim 1, Wong (Figure 7a) shows a circuit board comprising one or more of the multi-band monopole antennas.

Regarding claim 11, Wong (Figure 7a) discloses a symmetrical multi-band monopole antenna comprising an antenna substrate; first and second conductors 12 (right and left conductors of line 13) for receiving networking signals in the frequency range of about 4.9 GHz to about 5.875 GHz, the first and second conductors having symmetrical polygonal shapes with an aspect ratio of length to width of less than about 5 to about 1; third and fourth conductors 11 (right and left conductors of line 13) for receiving networking signals in the frequency range of about 2.4 GHz to about 2.5 GHz, the third and fourth conductors adopting symmetrical linear, space-filling, or grid dimension shapes; and a feeding point for connecting the first, second, third and fourth conductors, wherein the first and second conductors are symmetrically oriented with respect to each other about a central axis on the antenna substrate and the third and fourth conductors are symmetrically oriented with respect to each other about the central axis on the antenna substrate.

Regarding claim 16, as applied to claim 11, Wong (col 4, lines 42-49) teaches that the first conductor receives network signals in the 802.11a band.

Regarding claim 17, as applied to claim 11, Wong (col 4, lines 42-49) teaches that the second conductor receives network signals in the 802.11b band.

Regarding claim 19, as applied to claim 11, Wong (Figure 7a) shows a circuit board comprising one or more of the multi-band monopole antennas.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 3-5 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yeh.

Regarding claims 3-5, Yeh discloses the claimed invention except explicitly mentioning that the first conductor has an aspect ratio of less than about 3 to about 1, less than about 2 to about 1, or about 3 to about 2. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the aspect ratio of the first conductor to be less than about 3 to about 1, less than about 2 to about 1, or about 3 to about 2, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F. 2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claim 8, Yeh discloses the claimed invention except that the substrate comprises a 10 mm x 10 mm x 0.8 mm circuit board with a copper base conductor. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the substrate to be a circuit board having the dimension of 10 mm x 10 mm x 0.8 mm, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F. 2d 272, 205 USPQ 215 (CCPA 1980).

8. Claims 3-5 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yeh.

Regarding claims 13-15, Wong discloses the claimed invention except explicitly mentioning that the first and second conductors each have an aspect ratio of less than about 3 to

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about 1, less than about 2 to about 1, or about 3 to about 2. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the aspect ratio of the first and second conductors to be less than about 3 to about 1, less than about 2 to about 1, or about 3 to about 2, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F. 2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claim 18, Wong discloses the claimed invention except that the substrate comprises a 10 mm x 10 mm x 0.8 mm circuit board with a copper base conductor. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the substrate to be a circuit board having the dimension of 10 mm x 10 mm x 0.8 mm, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F. 2d 272, 205 USPQ 215 (CCPA 1980).

9. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yeh in view of Kaloi (US 4,356,492).

Yeh discloses the claimed invention except that the first conductor has one or more notches where material is removed from the polygonal shape. Kaloi (Figure 1a) discloses an antenna having a conductor 10 having one or more notches where material is removed from the polygonal shape. It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the Yeh antenna with the first conductor having one or more notches where material is removed from the polygonal shape, as taught by Kaloi, doing so would enable impedance matching of the antenna for optimum performance.

10. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yeh in view of Hirabayashi (JP 2003347828).



Yeh discloses the claimed invention except that two or more multi-band monopole antennas are used and conducting material of the printed circuit board located between the antenna attachment points is interrupted. Hirabayashi (abstract) teaches two or more multi-band monopole antennas are used and conducting material of the printed circuit board located between the antenna attachment points is interrupted. It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ Yeh's antenna with two or more multi-band monopole antennas are used and conducting material of the printed circuit board located between the antenna attachment points is interrupted, as taught by Hirabayashi, doing so would enable better isolation between the elements for optimum performance.

11. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wong in view of Kaloi (US 4,356,492).

Wong discloses the claimed invention except that the first conductor has one or more notches where material is removed from the polygonal shape. Kaloi (Figure 1a) discloses an antenna having a conductor 10 having one or more notches where material is removed from the polygonal shape. It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the Wong antenna with the first conductor having one or more notches where material is removed from the polygonal shape, as taught by Kaloi, doing so would enable impedance matching of the antenna for optimum performance.

12. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wong in view of Hirabayashi (JP 2003347828).

Wong discloses the claimed invention except that two or more multi-band monopole antennas are used and conducting material of the printed circuit board located between the

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antenna attachment points is interrupted. Hirabayashi (abstract) teaches two or more multi-band monopole antennas are used and conducting material of the printed circuit board located between the antenna attachment points is interrupted. It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ Wong's antenna with two or more multi-band monopole antennas are used and conducting material of the printed circuit board located between the antenna attachment points is interrupted, as taught by Hirabayashi, doing so would enable better isolation between the elements for optimum performance.

### *Conclusion*

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 7,071,877 B2 discloses a planar dual band antenna.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoang V. Nguyen whose telephone number is (571) 272-1825.

The examiner can normally be reached on Mondays-Fridays from 8:00 a.m. to 4:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas Owens can be reached on (571) 272-1662. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

15. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR

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system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Hvn  
10/18/07



**HOANG V. NGUYEN**  
**PRIMARY EXAMINER**